

您的潜力. 我们的动力

**Microsoft**<sup>®</sup>  
微软(中国)有限公司

# SQL Server 2005 Service Broker

王为  
微软认证讲师  
微软ESS护航专家

# Overview

您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司

- Service Broker Architecture
- Using Service Broker

# Lesson: Service Broker Architecture

您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司

- What Is Service-Oriented Architecture?
- Service Broker Features
- Service Broker System Architecture
- Service Broker Conversation Architecture
- Service Broker Conversation Process
- Service Broker Security Architecture

# 异步程序的讨论

您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司

- 股票交易系统中的结算活动
- 订单输入系统中的发货信息
- 旅行预订系统在客户填写完路线后再进行实际的预订, 并在预订完成后发送确认电子邮件

您的潜力. 我们的动力

**Microsoft®**  
微软(中国)有限公司

# ● 为什么排队应用程序难于编写？



您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司

- 消息的完整性
- 分布
- 事务性消息传送

## ● **Service Broker** 消息处理事务的步骤:

- 1. 开始事务。
- 2. 从会话组中接收一条或多条消息。
- 3. 从状态表中检索会话的状态。
- 4. 处理消息并根据消息内容对应用程序数据进行一项或多项更新。
- 5. 发送一些 **Service Broker** 消息: 即, 将响应发送到传入的消息或将消息发送到处理传入消息所需的其他服务。
- 6. 如果此会话组包含其他消息, 则读取和处理此会话组中的其他消息。
- 7. 使用新的会话状态更新会话状态表。
- 8. 提交事务

您的潜力. 我们的动力

**Microsoft®**  
微软(中国)有限公司

- 队列读取器管理



## ● 为什么要在数据库中进行消息传送？

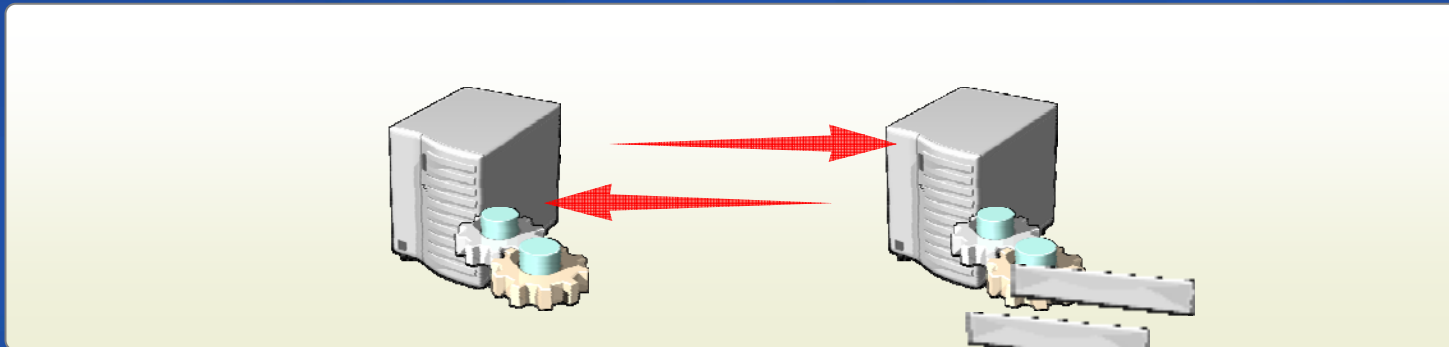
- 消息和数据的单客户端连接。
- 事务性消息传送不需要分布式事务或两阶段提交。
- 备份和恢复数据库还可以备份和恢复消息队列。
- 群集或数据库镜像
- 确定队列中的操作非常简单
- 事务性消息不要求两阶段提交
- 在提交事务时只需写入单个日志
- 可靠的消息传送通常将消息从传送队列传送到接收队列

# What Is Service-Oriented Architecture?

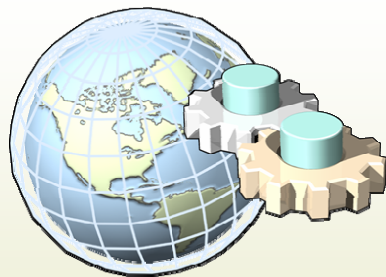
您的潜力, 我们的动力

**Microsoft**  
微软(中国)有限公司

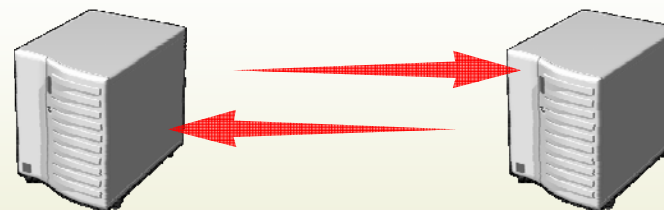
- Loosely coupled communication between services



- Examples of service-oriented architectures:



Web Services



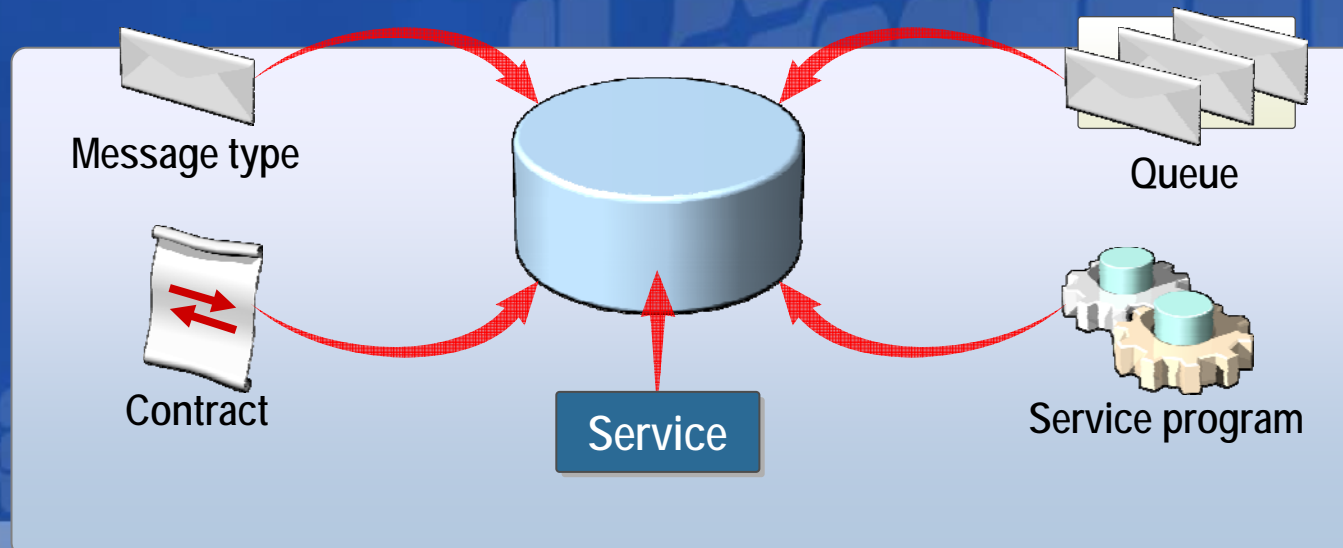
Message Queuing

# Service Broker System Architecture

您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司

SQL Server Object	Description
Message Type	Defines valid messages for exchange between services
Contract	Specifies type of messages and their direction in a conversation, initiator or target
Queue	Stores messages before sending and after receipt as result set
Service Program	The part of a service broker application that reads messages from a queue and processes them.
Service	Addressable endpoint for service communication



# Lesson: Using Service Broker

您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司

- How to Enable Service Broker in a Database
- Implementing Services
- How to Create Contracts
- How to Create Queues
- How to Create Services
- How to Send a Message
- How to Receive a Message



# How to Enable Service Broker in a Database

您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司

## 1 Check Service Broker status

```
SELECT is_broker_enabled  
FROM sys.databases  
WHERE database_id = db_id()
```

## 2 Enable Service Broker

```
ALTER DATABASE AdventureWorks  
SET ENABLE_BROKER
```



**MSDN Webcasts**



# Implementing Services

您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司

## Design:

- Message types
- Contracts
- Queues
- Services
- Service program logic

# How to Create Contracts

您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司

## 1 Create message types

```
CREATE MESSAGE TYPE  
[//Adventure-Works.com/Expenses/ExpenseClaim]  
VALIDATION = WELL_FORMED_XML  
  
CREATE MESSAGE TYPE  
[//Adventure-Works.com/Expenses/ClaimResponse]  
VALIDATION = VALID_XML WITH SCHEMA COLLECTION awschemas
```

## 2 Create contract

```
CREATE CONTRACT  
[//Adventure-Works.com/Expenses/ProcessExpense]  
( [//Adventure-Works.com/Expenses/ExpenseClaim]  
  SENT BY INITIATOR,  
  [// Adventure-Works.com/Expenses/ClaimResponse]  
  SENT BY TARGET )
```



msdn

MSDN Webcasts

# How to Create Queues

您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司

- 1 Create queue name
- 2 Choose whether queue is available
- 3 Specify any activation parameters

```
CREATE QUEUE ExpenseQueue
```

```
CREATE QUEUE ExpenseQueueWithActivation  
WITH STATUS = OFF,  
ACTIVATION (  
    PROCEDURE_NAME = ProcessExpense,  
    MAX_QUEUE_READERS = 5,  
    EXECUTE AS SELF)
```

# How to Create Services

您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司

- 1 Create service name
- 2 Choose storage queue
- 3 List contracts for which the service is a target
- 4 Choose whether to retain messages for conversation lifetime

```
CREATE SERVICE [//Adventure-Works.com/SubmitExpense]
ON QUEUE ExpenseQueue
( [//Adventure-Works.com/Expenses/ProcessExpense] )
```

# How to Send a Message

您的潜力, 我们的动力

**Microsoft**  
微软(中国)有限公司

- 1 Declare a dialog handle variable
- 2 Begin a dialog conversation
- 3 Send the message

```
DECLARE @dialog_handle uniqueidentifier  
  
BEGIN DIALOG CONVERSATION @dialog_handle  
FROM SERVICE [//Adventure-Works.com/SubmitExpense]  
TO SERVICE 'Adventure-Works.com/ProcessExpense'  
ON CONTRACT [//Adventure-Works.com/Expenses/ProcessExpense]  
  
;SEND ON CONVERSATION @dialog_handle  
MESSAGE TYPE [//Adventure-Works.com/Expenses/ExpenseClaim]  
(@msgString)
```



msdn

MSDN Webcasts



# How to Receive a Message

您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司

- 1 Declare variables for storing message details
- 2 Call RECEIVE statement
- 3 Check the message type, and process accordingly
- 4 If finished conversation, call END CONVERSATION

```
DECLARE @conversation UNIQUEIDENTIFIER
DECLARE @msg NVARCHAR(MAX), @msgType NVARCHAR(256)

;RECEIVE TOP(1) @conversation = conversation_handle,
@msgType = message_type_name, @msg = message_body
FROM ExpenseQueue

IF (@msgType = '//Adventure-Works.com/Expenses/ExpenseClaim')
    -- process @msg ...
END CONVERSATION @conversation
```



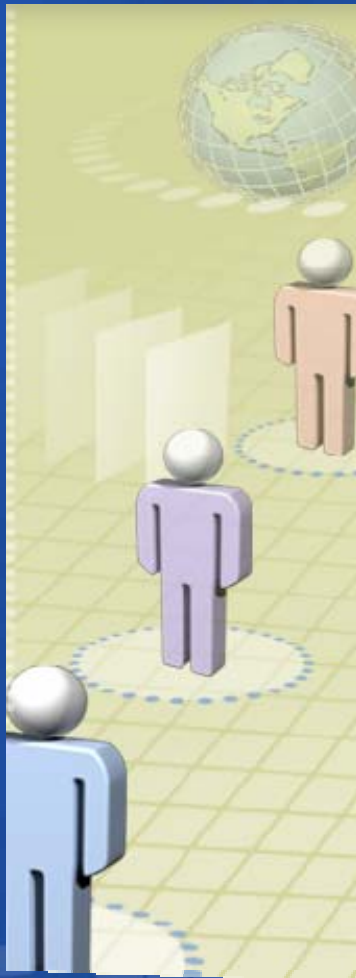
msdn

MSDN Webcasts

# Demonstration: Creating a Service Broker Application

您的潜力. 我们的动力

**Microsoft**  
微软(中国)有限公司




In this demonstration, you will see how to:

- Create Service Broker objects
- Test a Service Broker applications



# Question & Answer

如需提出问题，请单击“提问”按钮并在随后显示的浮动面板中输入问题内容。一旦完成问题输入后，请单击“提问”按钮。

 **问题和解答 (无问题)** ▲ ×

在此会议中尚未解答任何问题。

要向演示者提问，请在此处键入问

提问(A)

删除(D)

问题管理器(Q)

您的潜力. 我们的动力

**Microsoft®**  
微软(中国)有限公司

# **Microsoft®**

*Your potential. Our passion.™*

© 2003-2004 Microsoft Corporation. All rights reserved.  
This presentation is for informational purposes only. Microsoft makes no warranties, express or implied, in this summary.



**MSDN Webcasts**